

APPENDIX A-1**U.S. PATENT NO. 5,611,049 ('049)**

'049 Claim	Claim Elements	Accused Novell Product: BorderManager	Basis of Infringement
Claim 1	In a network of digital computers that includes a first plurality of Network Distributed Cache ("NDC") sites, each NDC site including an NDC that has an NDC buffer, a method for projecting images of a stored dataset from an NDC server terminator site into a second plurality of NDC client terminator sites in response to requests to concurrently access such stored dataset transmitted from a third plurality of client sites respectively to the second plurality of NDC client terminator sites, the method comprising the steps of:	Novell infringes this claim under 35 U.S.C. § 271(b) and/or (c). Novell BorderManager is software, which when loaded into a computer creates a BorderManager cache appliance. Novell's customers, such as internet service providers, content publishers and enterprises, incorporate BorderManager appliances in their computer networks. Operation of the BorderManager appliances by Novell's customers in their networks performs the claimed functions as described below and constitutes infringement under 35 U.S.C. § 271(a). The computer network—such as those shown in Figure 5 on page NOVL 013273, Figure 6 on NOVL 013275, Figure 7 on NOVL 013276 and Figure 8 on NOVL 013277—comprises two or more computers acting as client sites, which make concurrent requests for data from two or more BorderManager Proxy Caches (NDC client terminator sites) configured as client accelerators. The network also includes a	Literal and doctrine of equivalents

		<p>BorderManager Web Accelerator (NDC server terminator site) configured as a server accelerator. Each computer housing the BorderManager software includes a processor and a memory. The BorderManager software configures the computer to be a Network Distributed Cache ("NDC") site. In doing so, a portion of the computer memory is allocated to a number of buffers which form a cache. The BorderManager software combines with the computer memory to create a shared cache (i.e., an NDC). That is, a number of individual caches within the network act as a shared cache because they communicate with each other to resolve cache misses. Upon a BorderManager appliance receiving a request for data, if its buffers have such data, the appliance transmits the requested data back to the computer—client site(s) and/or other NDC site(s), such as a BorderManager Proxy Cache—that requested it. Otherwise, if the buffers within the Novell BorderManager appliance do not have the requested data, the appliance accesses such data and receives a copy (i.e., projected image) of the data from an appliance, such as a</p>	
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		<p>BorderManager Web Server Accelerator, acting as an NDC server terminator site.</p> <p><i>See</i> NCT 010657-010669.</p> <p><i>See also</i> NOVL 013267.</p> <p>"Novell's BorderManager includes an Internet object cache . . . that provide[s] significant benefits to intranet and Internet users:</p> <ul style="list-style-type: none"> • Proxy caching • Proxy cache hierarchies • Web server acceleration." <p>NOVL 013267.</p> <p>"When configured as a proxy cache, BorderManager uses its cache to store frequently accessed web pages locally. . . . As users access the Internet, the documents they browse are cached within the proxy's Internet object cache. When a user repeats a previous access, or when another user browses the same Internet site, BorderManager immediately responds to their request from its cache." NOVL 013272.</p> <p>" . . . the advantages of a proxy cache can be multiplied by placing additional caches throughout the organization. Multiple proxy caches can be configured in a hierarchy to move shared content closer</p>	
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		<p>to those who use it. With a cache hierarchy in place, first-time accesses and cache misses may be fetched from other caches . . . rather than returning all the way to the origin web server . . ." NOVL 013274.</p> <p>"In addition, these proxy caches communicate with each other to resolve cache misses before going to the origin server." NOVL 013275.</p> <p>"Using BorderManager proxy caches, you can design your own cache hierarchy." NOVL 013275.</p> <p>"Configured as a web server accelerator, Novell's Internet object cache eliminates the web server bottleneck by placing a dedicated cache in front of the web server and handling requests for all of the web server's cacheable content directly from its own cache." NOVL 013277.</p>	
	(a) the NDC receiving the request to access data in the stored dataset;	<p>The shared cache (NDC) of a BorderManager appliance (NDC site) receives a request to access data in a stored dataset.</p> <p><i>See</i> NCT 010670-010671.</p>	Literal and doctrine of equivalents
	(b) the NDC checking the NDC buffer at this NDC site to determine if a projected	The shared cache (NDC) of a BorderManager appliance (NDC site) checks its	Literal and doctrine of equivalents

	image of data requested from the stored dataset is already present there;	memory (NDC buffer) to determine whether it has a copy (projected image) of the requested data. <i>See</i> NCT 010672-010673.	
	(c) if the NDC buffer of this NDC site does not contain a projected image of all data requested from the stored dataset, and if the NDC site receiving the request is not the NDC server terminator site for the stored dataset, the NDC of this NDC site transmitting a request for data from this NDC site downstream to another NDC site closer to the NDC server terminator site for the stored dataset than the present NDC site;	If the memory (NDC buffer) for the shared cache of the BorderManager appliance (NDC site) does not contain a copy (projected image) of all the requested data, the shared cache (NDC) transmits a request for the requested data downstream to another appliance (NDC site), such as a BorderManager Proxy Cache, that is closer to the server accelerator (NDC server terminator site) for the dataset or to the server accelerator (NDC server terminator site), such as the BorderManager Web Server Accelerator. <i>See</i> NCT 010674-010678.	Literal and doctrine of equivalents
	(d) if the NDC buffer of this NDC site does not contain a projected image of all data requested from the stored dataset, and if the NDC site receiving the request is the NDC server terminator site for the stored dataset, the NDC of the NDC server terminator site accessing the stored dataset to project an image of the requested data into the NDC buffer of the NDC server terminator site;	If the memory (NDC buffer) for the shared cache (NDC) of the downstream appliance (NDC site) does not contain a copy (projected image) of all data requested from the stored dataset, and if the downstream appliance (NDC site) is the server accelerator (NDC server terminator site), such as the BorderManager Web Server Accelerator, for the stored dataset, the shared cache (NDC) of the	Literal and doctrine of equivalents

		<p>BorderManager Web Server Accelerator accesses the stored dataset to project an image of the requested data into its memory (NDC buffer).</p> <p><i>See</i> NCT 010679-010683.</p>	
	<p>(e) repeating the steps (a) through (d) until the NDC buffer of the downstream NDC site receiving the request contains a projected image of all requested data;</p>	<p>The shared cache (NDC) of BorderManager Web Server Accelerator (NDC server terminator site) continues to check its memory (buffer) to determine whether it contains a copy (projected image) of all requested data, and if the shared cache (NDC buffer) does not contain a copy of all data requested from the stored dataset, the shared cache (NDC buffer) of the BorderManager Web Server Accelerator (NDC server terminator site) continues to access the stored dataset until its memory (NDC buffer) receives a copy of all the requested data.</p> <p><i>See</i> NCT 010684-010686.</p>	<p>Literal and doctrine of equivalents</p>
	<p>(f) each successive NDC site, having obtained a projected image of all the requested data, returning the requested data upstream to the NDC site from which the NDC site received the request until the requested data arrives at the NDC client terminator site, each NDC site that returns data upstream to the</p>	<p>After the BorderManager Web Server Accelerator (NDC server terminator site) obtains a copy (projected image) of all the requested data, its shared cache (NDC) sends the data upstream, either directly or through intermediate NDC sites (such as other BorderManager</p>	<p>Literal and doctrine of equivalents</p>

	requesting NDC site retaining a copy of the returned data that the returning NDC site may subsequently transmit to an NDC site other than the NDC site to which the returning NDC site first returned the data, whereby images of the stored dataset may be projected concurrently from a single NDC site into the second plurality of NDC client terminator sites; and	appliances), to the BorderManager Proxy Cache acting as the NDC client terminator site. The BorderManager Web Server Accelerator, and any intermediate NDC sites (appliances), retain a copy of the returned data so that it (they) may subsequently and concurrently transmit a copy of such data to two or more BorderManager Proxy Caches acting as client accelerators (NDC client terminator sites). <i>See</i> NCT 010687-010695.	
	(g) the NDC client terminator site, upon receiving the requested data, returning the requested data to the client site that requested access to the stored dataset.	Upon receiving the requested data, the BorderManager Proxy Cache acting as the client accelerator (NDC client terminator site) sends the data to the client site that requested it. <i>See</i> NCT 010696-010698.	Literal and doctrine of equivalents

Claim 16	A network of digital computers that includes a first plurality of client sites which request access to a stored dataset that is stored at a location that can be accessed through the network, the network comprising: a second plurality of NDC sites, the stored dataset whose access is requested by the client sites being stored at an NDC server terminator site, a request from the client sites for access to the stored dataset	Novell infringes this claim under 35 U.S.C. § 271(b) and/or (c). Novell BorderManager is software, which when loaded into a computer creates a BorderManager cache appliance. Novell's customers, such as internet service providers, content publishers and enterprises, incorporate BorderManager appliances in their computer networks.	Literal and doctrine of equivalents
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	<p>being received by a third plurality of NDC client terminator sites, each NDC site including:</p>	<p>Inclusion and operation of the BorderManager appliances by Novell's customers in their networks performs the claimed functions as described below and constitutes infringement under 35 U.S.C. § 271(a). The computer network—such as those shown in Figure 5 on page NOVL 013273, Figure 6 on NOVL 013275, Figure 7 on NOVL 013276 and Figure 8 on NOVL 013277—comprises two or more computers acting as client sites, which make concurrent requests for data from two or more BorderManager Proxy Caches (NDC client terminator sites) configured as client accelerators. The network also includes a BorderManager Web Accelerator (NDC server terminator site) configured as a server accelerator. Each computer housing the BorderManager software includes a processor and a memory. The BorderManager software configures the computer to be a Network Distributed Cache ("NDC") site. In doing so, a portion of the computer memory is allocated to a number of buffers which form a cache. The BorderManager software combines with the computer memory to create a shared cache (i.e., an NDC). That is, a number</p>	
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		<p>of individual caches within the network act as a shared cache because they communicate with each other to resolve cache misses. Upon a BorderManager appliance receiving a request for data, if its buffers have such data, the appliance transmits the requested data back to the computer—client site(s) and/or other NDC site(s), such as another BorderManager Proxy Cache— that requested it. Otherwise, if the buffers within the Novell BorderManager appliance do not have the requested data, the appliance accesses such data and receives a copy (i.e., projected image) of the data from an appliance, such as a BorderManager Web Server Accelerator, acting as an NDC server terminator site.</p> <p><i>See</i> NCT 010702-010712.</p> <p><i>See also</i> NOVL 013267.</p> <p>"Novell's BorderManager includes an Internet object cache . . . that provide[s] significant benefits to intranet and Internet users:</p> <ul style="list-style-type: none"> • Proxy caching • Proxy cache hierarchies • Web server acceleration." <p>NOVL 013267.</p> <p>"When configured as a proxy cache,</p> 	
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		<p>BorderManager uses its cache to store frequently accessed web pages locally. . . . As users access the Internet, the documents they browse are cached within the proxy's Internet object cache. When a user repeats a previous access, or when another user browses the same Internet site, BorderManager immediately responds to their request from its cache." NOVL 013272.</p> <p>" . . . the advantages of a proxy cache can be multiplied by placing additional caches throughout the organization. Multiple proxy caches can be configured in a hierarchy to move shared content closer to those who use it. With a cache hierarchy in place, first-time accesses and cache misses may be fetched from other caches . . . rather than returning all the way to the origin web server . . ." NOVL 013274.</p> <p>"In addition, these proxy caches communicate with each other to resolve cache misses before going to the origin server." NOVL 013275.</p> <p>"Using BorderManager proxy caches, you can design your own cache hierarchy." NOVL 013275.</p>	
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		<p>"Configured as a web server accelerator, Novell's Internet object cache eliminates the web server bottleneck by placing a dedicated cache in front of the web server and handling requests for all of the web server's cacheable content directly from its own cache." NOVL 013277.</p>	
	(a) an NDC that has an NDC buffer;	<p>A BorderManager appliance (NDC site) has a shared cache (NDC) that includes a memory, which comprises a buffer, wherein copies of cached data may be stored and which is checked to determine whether cached data is stored therein.</p> <p><i>See</i> NCT 010713-010714.</p>	Literal and doctrine of equivalents
	(b) means for the NDC to receive the request to access the stored dataset;	<p>This claim element is subject to interpretation under 35 U.S.C. § 112, ¶6.</p> <p>The software of the shared cache (NDC) of the BorderManager appliance performs the claimed function of receiving a request to access a stored dataset. The BorderManager appliance incorporates software, the same as or equivalent to intercept routine 102 as disclosed in U.S. Patent No. 5,611,049, for performing this claimed function.</p>	Literal and doctrine of equivalents

		See NCT 010715.	
	(c) means for the NDC to check the NDC buffer at this NDC site to determine if a projected image of data requested from the stored dataset is already present there, wherein:	<p>This claim element is subject to interpretation under 35 U.S.C. § 112, ¶6.</p> <p>The software of the shared cache (NDC) of the BorderManager appliance (NDC site) performs the claimed function of checking its memory (NDC buffer) to determine whether the memory has a projected image of the requested data. The BorderManager appliance incorporates software, the same as or equivalent to buffer search routine 126 as disclosed in U.S. Patent No. 5,611,049, for performing this claimed function.</p> <p>See NCT 010716-010717.</p>	Literal and doctrine of equivalents
	i. if the NDC buffer of this NDC site does not contain a projected image of all data requested from the stored dataset, and if this NDC site is not the NDC server terminator site for the stored dataset, the NDC includes means for transmitting a request for data from this NDC site downstream to another NDC site closer to the NDC server terminator site for the stored dataset than the present NDC site;	<p>This claim element is subject to interpretation under 35 U.S.C. § 112, ¶6.</p> <p>The software of the shared cache (NDC) of the BorderManager Proxy Cache (NDC site) performs the claimed function of transmitting a request for data downstream to another NDC site, such as another appliance. The BorderManager Proxy Cache incorporates software, the same as or equivalent to request director routine 144 as</p>	Literal and doctrine of equivalents

		disclosed in U.S. Patent No. 5,611,049, for performing this claimed function. <i>See</i> NCT 010718-010722.	
	ii. if the NDC buffer of this NDC site does not contain a projected image of all data requested from the stored dataset, and if this NDC site is the NDC server terminator site for the stored dataset, the NDC including means for accessing the stored dataset to project an image of the requested data into the buffer of this NDC; and	This claim element is subject to interpretation under 35 U.S.C. § 112, ¶6. The software of the shared cache (NDC) of the BorderManager Web Server Accelerator (NDC server terminator site) performs the claimed function of accessing the stored dataset to project an image of the requested data into its memory (NDC buffer). The BorderManager Web Server Accelerator incorporates software, the same as or equivalent to file system interface routines 112 as disclosed in U.S. Patent No. 5,611,049, for performing this claimed function. <i>See</i> NCT 010723-010727.	Literal and doctrine of equivalents
	iii. if the NDC buffer of an NDC site contains a projected image of all requested data, the NDC including means for returning the data requested from this NDC site upstream to the NDC site from which this NDC site received the request, whereby through a succession of such returns of data from one NDC site to the next upstream NDC site the	This claim element is subject to interpretation under 35 U.S.C. § 112, ¶6. The software of the shared cache (NDC) of a BorderManager appliance (NDC site) performs the claimed function of returning the data requested to the upstream appliance (NDC site) that requested	Literal and doctrine of equivalents

	<p>requested data ultimately arrives at the NDC client terminator site, each NDC site that returns data upstream to the requesting NDC site retaining a copy of the returned data that the returning NDC site may subsequently transmit to an NDC site other than the NDC site to which the returning NDC site first returned the data, whereby images of the stored dataset may be projected concurrently from a single NDC site into the third plurality of NDC client terminator sites; and</p>	<p>the data. The BorderManager appliance incorporates software, the same as or equivalent to the buffer search routine 126 and client intercept routines 102 or the buffer search routine 126 and server interface routines 104 as disclosed in U.S. Patent No. 5,611,049, for performing this claimed function.</p> <p>The memory (NDC buffer) and software of the shared cache (NDC) of the BorderManager appliance perform the claimed function of retaining a copy of the returned data. The BorderManager appliance includes a pool 128 of buffers 129 and incorporates software, the same as or equivalent to the buffer search routine 126 as disclosed in U.S. Patent No. 5,611,049, for performing this claimed function.</p> <p><i>See</i> NCT 010728-010735.</p>	
	<p>(d) means for the NDC client terminator site to return the requested data to the client site that requested access to the stored dataset.</p>	<p>This claim element is subject to interpretation under 35 U.S.C. § 112, ¶6.</p> <p>The software of the shared cache (NDC) of the BorderManager Proxy Cache performs the claimed function of returning the requested data to the client site. The BorderManager Proxy</p>	<p>Literal and doctrine of equivalents</p>

		<p>Cache incorporates software, the same as or equivalent to the client intercept routines 102 or server interface routines 104 as disclosed in U.S. Patent No. 5,611,049, for performing this claimed function.</p> <p><i>See</i> NCT 010736-010737.</p>	
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